

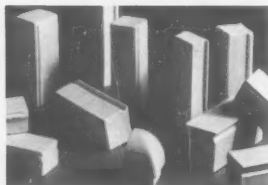
"DIAMONITE JIM" SAYS...



"For years, you've used our pebble mill rods and balls. You know how good they are ...



Now, try our mill lining blocks ...



They're as good as our grinding media and we make them in a full range of sizes and configurations."



Diamonite Products

Dewey and Almy Chemical Division

W. R. Grace & Co.

453 West McConkey Street
Shreve, Ohio 44676-9741
(216) 567-2145, Telex 98-6342

Call or write for literature or product application assistance on grinding rods and balls or mill lining blocks.

For information circle 31

CERAMIC INDUSTRY 1984 EDITORIAL INDEX

Advanced ceramics outlook

Advanced ceramics competition will favor diversified companies . . . Jun, 36
Sialon cutting tools promise productivity gains . . . Jun, 33

Alumina

Innovation spurs electronic firm's growth . . . Feb, 20
New lining resists corrosion, wear . . . May, 36
R&W custom fabricates technical ceramics . . . Oct, 26

Spray dryer converts slurry to powder in seconds . . . May, 26

Artware

Industry experts talk color/design . . . July, 34
Innovations expand use of Ram process . . . Mar, 42

Batching systems

Batching: putting it all together . . . May, 38
Bed drying method cuts energy costs . . . May, 34
New batching techniques—more, better, at less cost . . . May, 32

New technologies boost sanitaryware production . . . Apr, 72

Spray dryer converts slurry to powder in seconds . . . May, 26

Boron carbide

R&W custom fabricates technical ceramics . . . Oct, 26

Burners & controls

Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40

Capacitors

CAPS provides leading edge in MLC technology . . . Oct, 22

Colors in design

Computerized system meets growing demand of color-conscious markets . . . Sep, 38

Discovery in decoration—New riches for glass, ceramics . . . Sep, 24

Industry experts talk color/design . . . Jul, 34

Computers in manufacturing

Automatic controls increase production efficiency . . . Mar, 36

Computerized technology propels glass into 21st century . . . Mar, 28

New technologies boost sanitaryware production . . . Apr, 72

Cost/price trends

Ceramic materials price index . . . Jan, 21

Decorating equipment

Discovery in decoration—New riches for glass, ceramics . . . Sep, 24

Demographic markets

Advanced ceramics . . . Aug, 25
Glass . . . Aug, 33

Porcelain enamel . . . Aug, 47
Whiteware . . . Aug, 41

Dinnerware/fine china

Industry experts talk color/design . . . Jul, 34

Relining kiln boosts production 40%, fuel cut 15% . . . Apr, 80

Economic issues

Advanced ceramics—Reducing strategic materials vulnerability . . . Jan, 26

Electronic products

CAPS provides leading edge in MLC technology . . . Oct, 22

Innovation spurs electronic firm's growth . . . Feb, 20

Interamics carves niche in ceramic package market . . . Mar, 22

Japanese update—the fever continues

. . . Sep, 34
R&W custom fabricates technical ceramics . . . Oct, 26

Energy conservation

HCP slashes energy consumption 50% . . . Oct, 34

Making more money in glass . . . Jul, 40

Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40

Relining kiln boosts production 40%, fuel cut 15% . . . Apr, 80

Energy management products

Car top design, construction improves fuel efficiency . . . Feb, 32

High-temp kiln linings—a total fiber package . . . Feb, 24

Low refractory mass—key to tunnel kiln efficiency . . . Feb, 34

New developments in glass refractories promote energy savings . . . Feb, 30

\$750 million European market . . . Feb, 43

Energy management systems

Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40

Engine components

Ceramic engine components reduce wear, friction . . . Jul, 33

Ceramics play integral role in adiabatic's future . . . Jul, 26

New ceramic looks to future in aerospace . . . Sep, 36

U.S. needs ceramic program for heat engines . . . May, 84

Engine technology

Ceramic engine components reduce wear, friction . . . Jul, 33

Ceramics play integral role in adiabatic's future . . . Jul, 26

New ceramic looks to future in aerospace . . . Sep, 36

PSZ—a breakthrough in toughness . . . Apr, 40

U.S. needs ceramic program for heat engines . . . May, 22

Equipment applications

Automation speeds P/E finishing . . . Apr, 78

Batching: putting it all together . . . May, 38

Bed drying method cuts energy costs . . . May, 34

Coating process reduces fumes, corrosion . . . Apr, 58

Computerized system meets growing demands of color-conscious markets . . . Sep, 38

HIP expands range of processing capabilities . . . Apr, 56

New batching techniques—more, better, at less cost . . . May, 32

Product showcase '85 . . . Nov, 18

Spray dryer converts slurry to powder in seconds . . . May, 26

Ferrites

Advanced ceramics—reducing strategic materials vulnerability . . . Jan, 26

Innovation spurs electronic firm's growth . . . Feb, 20

Spray dryer converts slurry to powder in seconds . . . May, 26

Fiber optics

Datacoms—fiber optics' major growth area . . . Jul, 22

Japanese update—the fever continues . . . Sep, 34

Floor & wall tile

Aggressive marketing doubles tile sales . . . Dec, 38

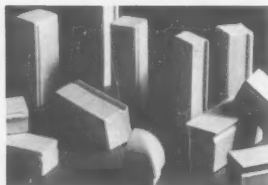
"DIAMONITE JIM" SAYS...



"For years, you've used our pebble mill rods and balls. You know how good they are ...



Now, try our mill lining blocks ...



They're as good as our grinding media and we make them in a full range of sizes and configurations."



Diamonite Products

Dewey and Almy Chemical Division

W. R. Grace & Co.

453 West McConkey Street
Shreve, Ohio 44676-9741
(216) 567-2145, Telex 98-6342

Call or write for literature or product application assistance on grinding rods and balls or mill lining blocks.

For information circle 31

CERAMIC INDUSTRY 1984 EDITORIAL INDEX

Advanced ceramics outlook

Advanced ceramics competition will favor diversified companies . . . Jun, 36
Sialon cutting tools promise productivity gains . . . Jun, 33

Alumina

Innovation spurs electronic firm's growth . . . Feb, 20
New lining resists corrosion, wear . . . May, 36
R&W custom fabricates technical ceramics . . . Oct, 26
Spray dryer converts slurry to powder in seconds . . . May, 26

Artware

Industry experts talk color/design . . . July, 34
Innovations expand use of Ram process . . . Mar, 42

Batching systems

Batching: putting it all together . . . May, 38
Bed drying method cuts energy costs . . . May, 34
New batching techniques—more, better, at less cost . . . May, 32
New technologies boost sanitaryware production . . . Apr, 72
Spray dryer converts slurry to powder in seconds . . . May, 26

Boron carbide

R&W custom fabricates technical ceramics . . . Oct, 26

Burners & controls

Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40

Capacitors

CAPS provides leading edge in MLC technology . . . Oct, 22

Colors in design

Computerized system meets growing demand of color-conscious markets . . . Sep, 38
Discovery in decoration—New riches for glass, ceramics . . . Sep, 24
Industry experts talk color/design . . . Jul, 34

Computers in manufacturing

Automatic controls increase production efficiency . . . Mar, 36
Computerized technology propels glass into 21st century . . . Mar, 28
New technologies boost sanitaryware production . . . Apr, 72

Cost/price trends

Ceramic materials price index . . . Jan, 21

Decorating equipment

Discovery in decoration—New riches for glass, ceramics . . . Sep, 24

Demographic markets

Advanced ceramics . . . Aug, 25
Glass . . . Aug, 33
Porcelain enamel . . . Aug, 47
Whiteware . . . Aug, 41

Dinnerware/fine china

Industry experts talk color/design . . . Jul, 34
Relining kiln boosts production 40%, fuel cut 15% . . . Apr, 80

Economic issues

Advanced ceramics—Reducing strategic materials vulnerability . . . Jan, 26

Electronic products

CAPS provides leading edge in MLC technology . . . Oct, 22
Innovation spurs electronic firm's growth . . . Feb, 20
Interamics carves niche in ceramic package market . . . Mar, 22
Japanese update—the fever continues

. . . Sep, 34
R&W custom fabricates technical ceramics . . . Oct, 26

Energy conservation

HCP slashes energy consumption 50% . . . Oct, 34
Making more money in glass . . . Jul, 40
Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40
Relining kiln boosts production 40%, fuel cut 15% . . . Apr, 80

Energy management products

Car top design, construction improves fuel efficiency . . . Feb, 32
High-temp kiln linings—a total fiber package . . . Feb, 24
Low refractory mass—key to tunnel kiln efficiency . . . Feb, 34
New developments in glass refractories promote energy savings . . . Feb, 30

\$750 million European market . . . Feb, 43

Energy management systems

Oxygen-assisted glass melting cuts costs, increases pulls . . . Mar, 40

Engine components

Ceramic engine components reduce wear, friction . . . Jul, 33
Ceramics play integral role in adiabatic's future . . . Jul, 26
New ceramic looks to future in aerospace . . . Sep, 36

U.S. needs ceramic program for heat engines . . . May, 84

Engine technology

Ceramic engine components reduce wear, friction . . . Jul, 33
Ceramics play integral role in adiabatic's future . . . Jul, 26
New ceramic looks to future in aerospace . . . Sep, 36
PSZ—a breakthrough in toughness . . . Apr, 20
U.S. needs ceramic program for heat engines . . . May, 22

Equipment applications

Automation speeds P/E finishing . . . Apr, 78
Batching: putting it all together . . . May, 38
Bed drying method cuts energy costs . . . May, 34
Coating process reduces fumes, corrosion . . . Apr, 58

Computerized system meets growing demands of color-conscious markets . . . Sep, 38

HIP expands range of processing capabilities . . . Apr, 56

New batching techniques—more, better, at less cost . . . May, 32

Product showcase '85 . . . Nov, 18

Spray dryer converts slurry to powder in seconds . . . May, 26

Ferrites

Advanced ceramics—reducing strategic materials vulnerability . . . Jan, 26
Innovation spurs electronic firm's growth . . . Feb, 20

Spray dryer converts slurry to powder in seconds . . . May, 26

Fiber optics

Datacoms—fiber optics' major growth area . . . Jul, 22
Japanese update—the fever continues . . . Sep, 34

Floor & wall tile

Aggressive marketing doubles tile sales . . . Dec, 38

U.S. tile gains on imports	Jan, 13
Foodservice/institutional ware	
HCP slashes energy consumption 50%	Oct, 34
Forecast/outlook statistics	
Economic outlook '84-'85: ceramic markets continue strong	Jun, 24
Forming & finishing equipment	
Automation speeds P/E finishing	Apr, 78
HCP slashes energy consumption 50%	Oct, 34
HIP expands range of processing capabilities	Apr, 56
Innovations expand use of Ram process	Mar, 42
Glass containers	
Automatic controls increase production efficiency	Mar, 36
Coating process reduces fumes, corrosion	Apr, 58
Computerized technology propels glass into 21st century	Mar, 28
Glass container outlook: "It will get better"	Jun, 35
Madera modernizes to cut costs	Oct, 32
Making more money in glass	Jul, 40
New batching techniques—more, better, at less cost	May, 32
Oxygen-assisted glass melting cuts costs, increases pulls	Mar, 40
When rebuilding—it pays to go automatic	Mar, 32
Imports	
Aggressive marketing doubles tile sales	Dec, 38
Impact of imports on tableware, containers	Apr, 112
Industrial technology/R&D	
HIP expands range of processing	

capabilities	Apr, 56
In-line processing systems	
New technologies boost sanitaryware production	Apr, 72
Insulation techniques	
Car top design, construction improve fuel efficiency	Feb, 32
High-temp kiln linings—a total fiber package	Feb, 24
Low refractory mass—key to tunnel kiln efficiency	Feb, 34
Low-mass cars improve kiln performance	Feb, 36
New developments in glass refractories promote energy savings	Feb, 30
Relining kiln boosts production 40%, fuel cut 15%	Apr, 80
Kilns, furnaces, dryers	
HCP slashes energy consumption 50%	Oct, 34
Making more money in glass	Jul, 40
Oxygen-assisted glass melting cuts costs, increases pulls	Mar, 40
When rebuilding—it pays to go automatic	Mar, 32
Machinery technology/R&D	
Spray dryer converts slurry to powder in seconds	May, 26
Maintenance/repair products	
New lining resists corrosion, wear	May, 36
Market development	
Advanced ceramics—reducing strategic materials vulnerability	Jan, 26
Market statistics	
Aggressive marketing doubles tile sales	Dec, 38
Datacoms—fiber optics' major growth area	Jul, 22
Economic outlook '84-'85: ceramic markets	

continue strong	Jun, 24
Impact of imports of tableware, containers	Apr, 112
2nd annual Giants in ceramics/international	Dec, 31
2nd annual Giants in ceramics/USA	Aug, 22
Market strategies	
Datacoms—fiber optics' major growth area	Jul, 22
Industry experts talk color/design	Jul, 34
Innovation spurs electronic firm's growth	Feb, 20
Interamics carves niche in ceramic package market	Mar, 22
Materials handling products	
New lining resists corrosion, wear	May, 36
Materials technology/R&D	
Advanced ceramics—reducing strategic materials vulnerability	Jan, 26
Ceramic engine components reduce wear, friction	Jul, 33
Ceramics play integral role in adiabatic's future	Jul, 26
HIP expands range of processing capabilities	Apr, 56
Japanese update—the fever continues	Sep, 34
New batching techniques—more, better, at less cost	May, 32
New ceramic looks to future in aerospace	Sep, 36
PSZ—a breakthrough in toughness	Apr, 40
Spray dryer converts slurry to powder in seconds	May, 26
U.S. needs ceramic program for heat engines	May, 22
University-industry cooperation emphasizes ceramic development	Apr, 50

Continued on page 50.

• **RESEARCH** • **CONSULTANCY** • **TESTING** for

- **Whitewares**
Tableware • Tiles • Sanitaryware • Electrical Porcelain
- **Advanced Ceramics**
Silicon nitride • Silicon carbide • Alumina • Boron carbide • Zirconia etc

Free Literature

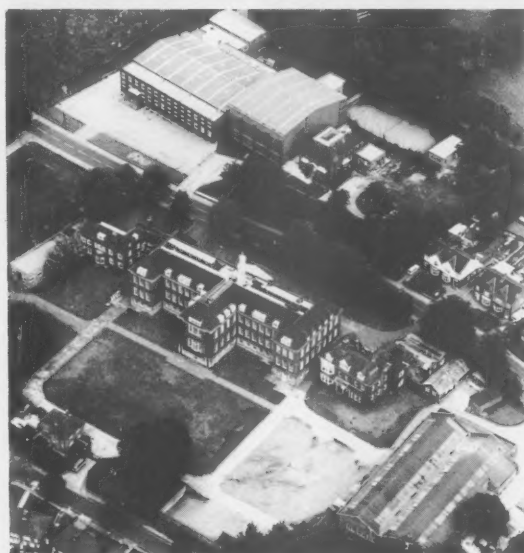
A wide range of literature describing all the B Ceram RA's services is available free on request.



B Ceram R A

BRITISH CERAMIC RESEARCH ASSOCIATION LTD
QUEENS ROAD PENKHULL
STOKE-ON-TRENT ST4 7LQ UK

Tel 0782 45431
Telex 36228 BCRA G



Aerial view of B Ceram RA — the largest institution for ceramic research in the world



NATLAS REG. NO. 0013

EDITORIAL INDEX

Continued from page 49.

Microcomputers

- Automatic controls increase production efficiencyMar, 36
- When rebuilding—it pays to go automaticMar, 32

Piezoelectrics

- Piezos bring new growth to Blue MountainDec, 24

Plant equipment

- Batching: putting it all togetherMay, 38
- Bed drying method cuts energy costsMay, 34

- Coating process reduces fumes, corrosionApr, 58
- Making more money in glassJul, 40

Porcelain enamel

- Automation speeds P/E finishingApr, 78

Porcelain enameled appliances

- Automation speeds P/E finishingApr, 78

Porcelain enameled cookware

- Industry experts talk color, designJul, 34

Power transmission & auxiliary equipment

- Making more money in glassJul, 40

Presses

- HIP expands range of processing capabilitiesApr, 56

- Innovations expand use of Ram processMar, 42

Process controls

- Automatic controls increase production efficiencyMar, 36
- Computerized technology propels glass into

- 21st centuryMar, 28
- Madera modernizes to cut costsOct, 32
- New technologies boost sanitaryware productionApr, 72
- When rebuilding—it pays to go automaticMar, 32

Process technology/R&D

- HIP expands range of processing capabilitiesApr, 56
- Japanese update—the fever continuesSep, 34

- New batching techniques—more, better, at less costMay, 32

Production technology/R&D

- PSZ—a breakthrough in toughnessApr, 40
- Spray dryer converts slurry to powder in secondsMay, 26

Programmable controllers

- Automatic controls increase production efficiencyMar, 36

- New batching techniques—more, better, at less costMay, 32

- When rebuilding—it pays to go automaticMar, 32

Refractories

- Car top design, construction improve fuel efficiencyFeb, 32

- High-temp kiln linings—a total fiber packageFeb, 24

- Low refractory mass—key to tunnel kiln efficiencyFeb, 34

- Low-mass cars improve kiln performanceFeb, 36

- New developments in glass refractories promote energy savingsFeb, 30

- Refining kiln boosts production 40%, fuel cut 15%Apr, 80

Silicon carbide

- Advanced ceramics—reducing strategic

- materials vulnerabilityJan, 26
- Ceramic engine components reduce wear, frictionJul, 33

Silicon nitride

- Advanced ceramics—reducing strategic materials vulnerabilityJan, 26

- Ceramics play integral role in adiabatic's futureJul, 26

- New ceramic looks to future in aerospaceSep, 36

Substrates & packages

- Interamics carves niche in ceramic package marketMar, 22

Titanates

- Spray dryer converts slurry to powder in secondsMay, 26

Trends in design

- Discovery in decoration—new riches for glass, ceramicsSep, 24

- Industry experts talk color, designJul, 34

Trends in energy

- Making more money in glassJul, 40

- Oxygen-assisted glass melting cuts costs, increases pullsMar, 40

Trends in marketing & markets

- Aggressive marketing doubles tile salesDec, 38

- Datcoms—fiber optics' major growth areaJul, 22

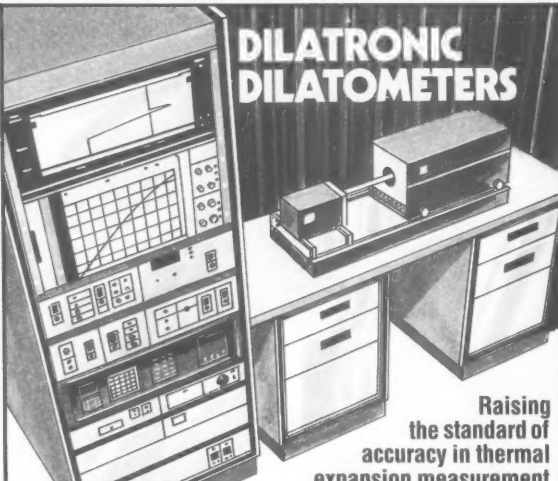
- Industry experts talk color, designJul, 34

- Innovation spurs electronic firm's growthFeb, 20

- Interamics carves niche in ceramic package marketMar, 22

Trends in technology/R&D

- Advanced ceramics—reducing strategic materials vulnerabilityJan, 26
- Computerized technology propels glass into 21st centuryMar, 28




DILATRONIC DILATOMETERS

**Raising
the standard of
accuracy in thermal
expansion measurement**

Uncompromised engineering gives you the highest accuracy possible by incorporating such features as measuring head thermal stabilization and differential measuring mode with NBS reference material. Just try to match Dilatron's dilatometer's single crystal sapphire push rods for measurements to 1750°C. Patented telescopic ball slides support the measuring head cover and furnace for consistently reliable alignment. What's more, new automatic data collection, analysis and plotting is state-of-the-art with Dilatron's optional computer system.

Find out more about the outstanding Dilatron series. Request our brochure.

THETA INDUSTRIES, INC.
26 Valley Road, Port Washington, NY 11050, U.S.A.
Telephone 516-883-4088, TWX 510 223 0822



A family of
thermal
instrumentation
you'll trust


Accuracy Counts!



It marks that vast difference between not quite and just right. You see it in cone performance everyday.

ORTON DELIVERS!

Accurate pyrometric cones, dilatometers and thermal laboratory services.



The Edward Orton Jr. Ceramic Foundation
6991 Old 3C Highway P.O. Box 460
Westerville, OH 43081
614-895-2663 800-848-3983

For information circle 33

50/CERAMIC INDUSTRY DECEMBER, 1984

For information circle 34

Japanese update—the fever continues Sep, 34
 New ceramic looks to future in aerospace Sep, 36
 U.S. needs ceramic program for heat engines May, 22
 University-industry cooperation emphasizes ceramic advancement Apr, 50
University technology/R&D
 University-industry cooperation emphasizes ceramic advancement Apr, 50
Vitreous sanitaryware
 New technologies boost sanitaryware production Apr, 72
Whiteware
 Aggressive marketing doubles tile sales Dec, 38
 HCP slashes energy consumption 50% Oct, 34
 Innovations expand use of Ram process Mar, 42
 Relining kiln boosts production 40%, fuel cut 15% Apr, 80
Zirconia
 Ceramics play integral role in adiabatic future Jul, 26
 PSZ—a breakthrough in toughness Apr, 40
Authors
 Appelt, Susan Aug, 22, Dec, 31
 Ashfield, Adrian Jul, 40
 Baldwin, Alan W. Jul, 22
 Bowen, Bruce D. May, 32
 Bowman, Dan May, 34
 Bracken, Frank A. Jun, 35
 Davis, Allen D. Jr. Feb, 30
 Edgington, J.H. Mar, 36
 Fleming, Martin Jun, 24
 Heuber, Robert M. Mar, 40
 Janeway, Patricia A. Mar, 28,

. Apr, 40, Oct, 22, Oct, 26, Dec, 24
 Kamo, Roy Jul, 26
 Koppel, Lewis M. Jun, 36
 Loner, Ronald M. Feb, 36
 MacBeth, J.W. Jul, 33
 Maderazzo, Marc Apr, 56
 Marshall, Richard W. Mar, 32
 Mueller, James I. May, 22
 Mulligan, R.C. May, 36
 Olmstead, L.C. Feb, 32
 Pelleriti, Richard Mar, 42
 Schatz, Carl Mar, 40
 Tilstone, A.D. Jun, 33
 Tunno, Julian May, 26
 Wachtman, John B. Jr. Jan, 26,
 Apr, 50, Jul, 21, Sep, 34
 Wilk, Richard Feb, 34
 Young, J.S. Feb, 24
Plants
 Adiabatics Inc. Jul, 26
 American Fiber Optics Jul, 22
 Ampex Feb, 20
 Armitage Shanks Apr, 72
 Blue Mountain Pottery Dec, 24
 Caloric Apr, 18
 Carborundum Co. Jul, 33
 Diamonite Products May, 36
 Foster-Forbes Glass May, 32
 O. Hommel Co. Sep, 38
 Hueckel China & Porcelain Oct, 34
 Interamics Mar, 22
 Madera Glass Oct, 32
 Nilsen (U.S.A.) Apr, 40
 Northwestern Glass Apr, 58
 Owens-Illinois Mar, 28
 Pfaltzgraff Apr, 80
 R&W Products Oct, 26
 SFE Technologies Oct, 22

ADVERTISERS INDEX

Abel Pumps Corp.	37
Alpine, Inc., A.D.	13
Ari Industries, Inc.	37
BH-F Sales, Inc.	39
*Ball Packaging Products, Inc.	6
*Bickley Furnaces, Inc.	28-29
British Ceramic Research Association Limited	49
*Brittains Papers, Inc.	43
Buehler Ltd.	IBC
Cahners Publishing Company	40
*Cometals, Inc.	4, 20
Commercial Decal, Inc.	8
Corning Glass Works	45
Diamonite Products Mfg., Inc.	48
Duramic Products, Inc.	44
*Emhart Industries, Inc., Hartford Div.	23
Ferro Corp., Refractories Div.	7
Gas Turbine Division, ASME	54
Great Western Mfg. Co.	46
*Harrop Industries, Inc.	10
Horiba Instruments Incorporated	42
Jamaica National Investment Promotion Ltd.	22
Kentucky-Tennessee Clay Co., Inc.	BC
Lambertville Ceramic Mfg. Co.	41
Lemont Scientific	47
Meadowbrook Corp.	13
*Meyercord Co., The, a Johnson Matthey Co.	27
Micromech Mfg. Co.	19
Old Hickory Clay Co.	18
OMCO Cast Metals, Div. of Overmyer Corp.	12
Orton Jr., Edward, Ceramic Foundation	50
Peabody TecTank	46
*Quantachrome Corporation	51
Roskamp Mfg., Inc.	45
*H.C. Spinks Clay Co., Inc.	16
Swindell Dressler International Co.	14
Theta Industries, Inc.	50
*Unique Kilns and Furnaces, Div. HED Industries, Inc.	IFC-3
Warren Rupp Company	30
Wauke Engineering Co.	12

THE WORLD'S STANDARDS FOR B.E.T. SURFACE AREA ANALYZERS

MORE LABORATORIES PURCHASE THESE INSTRUMENTS THAN ANY OTHER.



MODERN DYNAMIC FLOW INSTRUMENTS

With years of outstanding performance proven to be the standard for B.E.T. surface area measurements.



QUANTASORB—A very fast, accurate and versatile instrument for surface area, pore size distributions, adsorption and desorption isotherms. Ideal for measuring chemisorption uptake.

MONOSORB—By far the world's fastest and most versatile single point B.E.T. surface area analyzer. Direct digital readout of surface area with extreme simplicity and accuracy. Ideal for process monitoring and other quality control applications.



There may be imitations but there are no equals.
QUANTACHROME CORPORATION POWDER INSTRUMENTATION
 Six Aerial Way, Syosset, NY 11791
 TWX: 510 221 2239 • TEL: 516 935-2240

For information circle 35

*See our catalog in the 1984 Ceramic Data Book.

This index is a feature maintained for the convenience of the advertiser. It is not a part of the advertisers contract and Ceramic Industry assumes no responsibility for its correctness.

Sales Offices

HOME OFFICE: 1350 E. Touhy Ave., P.O. Box 5080, Des Plaines, IL 60018, (312) 635-8800. Harold J. Sugarman, Group Vice President, Building/Construction; Lauren Tennant, Assistant to the Publisher; Neal F. Mohler, Director of Marketing, Linda K. Boyle, District Manager.

PENNSYLVANIA: Frank Escherich, District Manager; 1608 Law & Finance Bldg., Pittsburgh, PA 15219, (412) 281-8828. James A. Bauschka, 999 Old Eagle School Rd., Wayne, PA. 19087, (215) 293-1212.

NEW YORK: Harry H. Linden, District Manager; 475 Park Avenue South, New York, NY 10016. Phone: (212) 576-8058.

CALIFORNIA: John Bolduc, Cahners Publishing Co., 2041 Business Center Drive, Suite 109, Irvine, CA 92715. (714) 851-9422.

PACIFIC NORTHWEST: Pat Dakin, Cahners Publishing Co., 1750 W. Skyline Blvd., Box 6, Portland, OR 97221, (503) 297-3382.

ENGLAND & FRANCE: Sam Ichbia, Kingslea Press, Griffin House, 18-19 Ludgate Hill, Birmingham B3 1DW England, 021-238-8112.

INTERNATIONAL: Floyd Burdick, Cahners Publishing Co., 1350 E. Touhy Ave., P.O. Box 5080, Des Plaines, IL 60018, (312) 635-8800, Telex 910 2331 658.

CONTRACTS: Formal acceptance made only in Des Plaines.

CIRCULATION: Patrick Crotty, Circulation Director, 270 St. Paul St., Denver, CO 80206, (303) 388-4511.